

CLAIMS

Claim 1 (currently amended) A procedure for layered composition of models, comprising the steps of: applying whereby at least a first material layer that includes a moulding sand and optionally a bonding agent that includes a salt-crystal binder, a protein binder, or both is applied to an assembly platform, and applying followed by selective application of a second material layer that includes a moulding sand and optionally a bonding agent that includes a salt-crystal binder, a protein binder, or both; and repeating these two application steps are repeated until the required model is achieved and both materials form a solid structure in an appropriate mixture ratio, the first material layer, the and/or second material layer or both comprises a bonding agent encompassing comprising a salt-crystal binder, a and/or protein binder, or both.

Claim 2 (currently amended): A procedure according to claim 1, whereby the bonding agent is mixed into the material of the first material layer.

Claim 3 (currently amended): A procedure according to claim 1 or 2, whereby the first material layer includes is a mixture comprising a solvent, the bonding agent and moulding sand.

Claim 4 (currently amended): A procedure according to one of the previous claims claim 3, whereby the moulding sand is coated with the bonding agent.

Claim 5 (currently amended): A procedure according to one of the previous claims claim 1, whereby the bonding agent is mixed into the material of the second material layer.

Claim 6 (currently amended): A procedure according to one of the previous claims claim 1, whereby the first material layer comprises moulding sand and bonding agent, which is selectively contacted with and the second material comprises a solvent.

Claim 7 (currently amended): A procedure according to one of the previous claims claim 6, whereby the solvent essentially comprises water.

Claim 8 (currently amended): A procedure according to one of the previous claims claim 1, whereby the second material solvent is applied by means of droplet generation.

Claim 9 (currently amended): A procedure according to one of the previous claims claim 1, whereby the second material solvent is applied by means of screen printing or spraying through a template.

Claim 10 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the solvent is removed by drying after an appropriate reaction time has elapsed.

Claim 11 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the moulding sand comprises quartz sand, zircon sand, olivine sand and/or fireclay sand.

Claim 12 (currently amended): A procedure according to ~~one of the previous claims~~ claim 1, whereby the bonding agent comprises magnesium sulphate, sodium polyphosphate and/or proteins.

Claim 13 (cancelled).

Claim 14 (new): The procedure of claim 1, whereby the model is metal casting mould

Claim 15 (new): A procedure for layered composition of a metal casting mould, comprising the steps of:

- a) mixing solid particles of a bonding agent comprising a salt-crystal, a protein or a combination thereof, with a sand that comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof, to form a bonding agent/sand admixture,
- b) applying a thin layer of the bonding agent/sand admixture to an assembly field of an assembly platform;
- c) selectively applying a solvent to the bonding agent/sand admixture in required areas;
- d) lowering the assembly platform; and
- e) repeating at least steps (a)-(c) for applying an additional layer.

Claim 16 (new) The procedure of claim 15, characterized in that the solvent is water and is applied in a sufficient dose so that it is capable of bonding particles of sand within a layer to each other, to underlying sand particles that may be present; and the moulding sand comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof; and

Claim 17 (new) The procedure of claim 15, characterized in that the sand includes a quartz sand and the bonding agent includes a salt-crystal binder.

Claim 19 (new) A metal casting mould including a plurality of layers of a bonding agent/sand admixture comprising a salt-crystal, a protein or a combination thereof, with a sand that comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof, prepared according to the method of claim 15.

Claim 20 (new): A procedure for layered composition of a metal casting mould, comprising the steps of:

- a) mixing solid particles of a bonding agent comprising a salt-crystal, a protein or a combination thereof, with a sand that comprises quartz sand, zircon sand, olivine sand, fireclay sand or a combination thereof, to form a bonding agent/sand admixture;
- b) applying a thin layer of the bonding agent/sand admixture to an assembly field of an assembly platform;
- c) selectively applying water, in a sufficient dose so that it is capable of bonding particles of sand within a layer to each other, to underlying sand particles that may be present, to the bonding agent/sand admixture in required areas for reacting it with the bonding agent/sand admixture;
- d) drying the water;
- e) lowering the assembly platform; and
- f) repeating at least steps (a)-(d) for applying an additional layer.

Claim 21 (new) The procedure of claim 20, further characterized by a step of recycling the sand from the resulting mould.